AD-A233 131

NAVAL POSTGRADUATE SCHOOL
Monterey, California

DTIC
S ELECTE
MAR 2 1 1991
E D

GENDER DIFFERENCES IN THE
RETENTION OF
ENLISTED ARMY RESERVISTS

Kathryn Kocher
George Thomas

November 1990

Approved for public release; distribution unlimited.

91 3 18 121

NAVAL POSTGRADUATE SCHOOL
Monterey, California

RADM. R. W. West, Jr.   Harrison Shull
Superintendent   Provost

Reproduction of all or part of this report is authorized.

This report was prepared by:

George W. Thomas   Kathryn M. Kocher
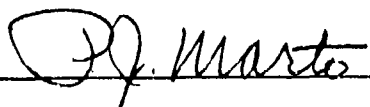Associate Professor   Labor Economist
          Department of Administrative Sciences

Reviewed by:

David R. Whipple, Chairman
Department of Administrative Sciences

Released by:

Paul J. Marto
Dean of Research

REPORT DOCUMENTATION PAGE

Form Approved
OMB No 0704-0188

1a REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b RESTRICTIVE MARKINGS
2a SECURITY CLASSIFICATION AUTHORITY	3 DISTRIBUTION/AVAILABILITY OF REPORT
2b DECLASSIFICATION/DOWNGRADING SCHEDULE	Approved for public release; distribution unlimited
4 PERFORMING ORGANIZATION REPORT NUMBER(S) NPS-AS-91-002	5 MONITORING ORGANIZATION REPORT NUMBER(S)

6a NAME OF PERFORMING ORGANIZATION Naval Postgraduate School	6b OFFICE SYMBOL (If applicable) AS	7a. NAME OF MONITORING ORGANIZATION U.S. Army Recruiting Command, Program Analysis and Evaluation Directorate
6c. ADDRESS (City, State, and ZIP Code) Monterey, CA 93943-5000		7b ADDRESS (City, State, and ZIP Code) HQ USAREC PAE RS, Bldg. 48-C Fort Sheridan, IL 60037-6090 ATTN: MAJ Aldridge

8a NAME OF FUNDING/SPONSORING ORGANIZATION U.S. ARMY RECRUITING COMMAND (same as 7a)	8b OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MIPR Nos. 87-38 and 87-55

8c. ADDRESS (City, State, and ZIP Code) HQ USAREC PAE RS, Bldg. 48-C Fort Sheridan, IL 60037-6090 Attn: MAJ Aldridge	10 SOURCE OF FUNDING NUMBERS			
	PROGRAM ELEMENT NO	PROJECT NO	TASK NO	WORK UNIT ACCESSION NO

11 TITLE (Include Security Classification)
GENDER DIFFERENCES IN THE RETENTION OF ENLISTED ARMY RESERVISTS   (Unclassified)

12. PERSONAL AUTHOR(S)
Kocher, Kathryn, and George Thomas

13a TYPE OF REPORT Final	13b TIME COVERED FROM _____ TO _____	14 DATE OF REPORT (Year, Month, Day) November 1990	15 PAGE COUNT 47

16 SUPPLEMENTARY NOTATION

17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Job turnover; Army enlisted Reserve retention; gender differences in retention; and part-time employment stability.

19 ABSTRACT (Continue on reverse if necessary and identify by block number)
This report investigates factors influencing the retention behavior of young enlisted men and women in the U.S. Army Reserve. Data from the 1986 Reserve Components Survey were matched with 1989 military personnel records to gain information on actual turnover/staying behavior of enlisted Reservists. A sample of 4,042 enlisted personnel serving part-time with the Army Selected Reserve was extracted and used in developing turnover models based on threshold behavior theory. Logit regression techniques were used to estimate separate turnover models by gender and prior Active Duty service status. Explanatory variables included demographic, military background, economic incentive, and cognitive/perceptual factors. Factor analysis was used to identify dimensions among attitudinal responses and to construct a set of composite variables. Model results indicate that all prior service/gender cohorts were significantly influenced by retirement benefits. Additional significant influences for these groups included: intrinsic job characteristics and family status for nonprior service women;

20 DISTRIBUTION/AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION Unclassified
22a NAME OF RESPONSIBLE INDIVIDUAL George W. Thomas, Assoc. Prof. of Economics	22b TELEPHONE (Include Area Code) 408-646-2741 22c OFFICE SYMBOL AS/Te

DD Form 1473, JUN 86   Previous editions are obsolete.

S/N 0102-LF-014-6603

GENDER DIFFERENCES IN THE RETENTION OF ENLISTED ARMY RESERVISTS

BY

KATHRYN KOCHER
and
GEORGE THOMAS

NOVEMBER 1990

DEPARTMENT OF ADMINISTRATIVE SCIENCES
NAVAL POSTGRADUATE SCHOOL
MONTEREY, CA 93943-5000

ABSTRACT

This report investigates factors influencing the retention behavior of young enlisted men and women in the U.S. Army Reserve. Data from the 1986 Reserve Components Survey were matched with 1989 military personnel records to gain information on actual turnover/staying behavior of enlisted Reservists. A sample of 4,042 enlisted personnel serving part-time with the Army Selected Reserve was extracted and used in developing turnover models based on threshold behavior theory. Logit regression techniques were used to estimate separate turnover models by gender and prior Active Duty service status. Explanatory variables included demographic, military background, economic incentive, and cognitive/perceptual factors. Factor analysis was used to identify dimensions among attitudinal responses and to construct a set of composite variables. Model results indicate that all prior service/gender cohorts were significantly influenced by retirement benefits. Additional significant influences for these groups included: intrinsic job characteristics and family status for nonprior service women; age at entry, paygrade, and income for nonprior service males; intrinsic job characteristics and drill characteristics for prior service women; and age at Reserve entry, paygrade, travel time to drill, and family status for prior service men.

Accession For		
NTIS GRA&I		☒
DTIC TAB		☐
Unannounced		☐
Justification		
By		
Distribution/		
Availability Codes		
Dist	Avail and/or Special	
A-1		

i

TABLE OF CONTENTS

LIST OF TABLES

I. INTRODUCTION AND BACKGROUND

A. Introduction

Changes in the gender composition of the labor force and the size of the traditional pool of potential enlistees have led to an increased utilization of women within a total force planning context. The proportion of women in the work force has expanded greatly in the last two decades. During the 1990s, 65% of all new job applicants are likely to be women. Women currently make up more than 10% of the armed forces and their participation during the 1980s has enabled the Army to meet its peacetime and mobilization needs in spite of budget cuts, competing civilian job opportunities, and a decline in the proportion of service-eligible young men in the population.

The Army Selected Reserve must have adequate personnel to meet its readiness goals. Changes in perceived threat and the worldwide distribution of U.S. defense resources may well lead to greater reliance on the Reserves in meeting total force objectives. Both men and women must be recruited and retained in appropriate numbers by the Reserve components if these goals are to be met. In order to select appropriate Reserve personnel management policies that will support the Army's overall manpower objectives, gender-related employment differences must be identified and evaluated.

B. Background

1. Turnover Studies

Attrition from military service represents a category of labor market mobility known as turnover. Turnover is defined as the degree of individual movement across the membership boundary of a social system (Hammermesh and Rees, 1984, p. 171). Such movement may be either voluntary or involuntary. Involuntary turnover occurs when

1

circumstances dictate a change in employment status that does not represent the preferences of the employee. Voluntary turnover, on the other hand, is the outcome of the employee's decision to leave his or her current job. A body of theoretical and empirical work has emerged that attempts to explain this decision-making process.

Mobley (1977) identified these factors as relevant to the turnover decision: job evaluation, job satisfaction/dissatisfaction, thinking of quitting, expected utility of job search and cost of quitting, intention to search, search for alternatives, evaluation of alternatives, comparison of alternatives versus present job, and finally, intention to quit/stay.

Mobley et al. (1978) later expanded his model of the turnover decision process to include age of employee and job tenure. Dissatisfied with the predictive ability of this model and those found in previous research, Mobley et al. (1979) developed a model that differentiated between present job satisfaction and future utility of current and alternative jobs, and also encompassed the nonwork-related factors involved in the turnover decision. The focus of this expanded model was the intention to quit as the immediate precursor to turnover. Intention to quit was, in turn, hypothesized to be determined by three factors: (1) satisfaction with the present job; (2) attraction or expected utility of the present job; and (3) attraction or expected utility of alternatives.

Miller et al. (1979) regrouped the variables in the Mobley et al (1979) model and focussed on withdrawal cognition (thinking about quitting) as a behavior influenced by job satisfaction and career mobility and leading to turnover. Michaels and Spector (1982) also modified the Mobley et al (1979) model to include preemployment expectations and degree of organizational commitment. Dalessio et al. (1986) used path analysis to address problems of muticollinearity that were identified in tests of the 1979 Mobley et al. model. Bluedorn (1982) emphasized the role of intention to leave as a variable intervening between

2

job satisfaction and turnover in a similar model.

Cotten and Tuttle (1986) summarized the correlates of turnover identified in these and other models. The correlates categorized as external factors included:

> *Employment perceptions,*
> *Unemployment rate,*
> *Accession rate, and*
> *Union presence*

Those correlates classified as work-related included:

> *Pay,*
> *Job performance,*
> *Role clarity,*
> *Task repetitiveness,*
> *Overall job satisfaction,*
> *Satisfaction with pay,*
> *Satisfaction with supervision,*
> *Satisfaction with co-workers,*
> *Satisfaction with promotion,*
> *Opportunities, and*
> *Organizational commitment*

Finally, factors identified as personal correlates included:

> *Age,*
> *Tenure,*
> *Gender,*
> *Biographical information,*
> *Education,*
> *Marital status,*
> *Number of dependents,*
> *Aptitude and ability,*
> *Intelligence,*
> *Behavioral intentions, and*
> *Met expectations.*

Steers and Mowday (1981) and Mowday et al. (1982) proposed a turnover process model describing the intention to leave as mediating between affective responses and turnover. Affective responses in this model were conditioned by job expectations that, in turn, reflected a variety of exogenous and job-related variables as well as individual

3

differences. Arnold and Feldman (1982) further investigated the nature of the intention to leave/stay variable by separating it into the intention to search for alternatives and the intention to change positions. The latter facet appeared to be the more influential.

Job satisfaction emerges as an important factor in many models of turnover behavior and a literature has evolved to explain the determinants of satisfaction. McCormick and Ilgen (1980) have suggested that the degree of satisfaction results from a comparison between an individual's "standard" and the degree to which that standard is realized in his job. The farther apart the standard and actual experience, the less satisfied the individual. Porter and Lawler (1968) presaged this approach with their focus on the role of met versus unmet expectations in determining the level of satisfaction derived from a particular job.

Studies of job satisfaction have investigated the aspects of employment that are sources of satisfaction or dissatisfaction for employees. Hertzberg, Mausner, and Snyderman (1959) classified these into (1) satisfiers - content factors that yielded satisfaction, and (2) dissatisfiers - context factors which yielded satisfaction in relationship to the job. The presence of content factors such as recognition of achievement results in satisfaction while the presence of context factors such as pleasant working conditions does not, in the absence of content factors, guarantee satisfaction but will lead to dissatisfaction if they are absent.

Job satisfaction is treated in the literature as either a global or a multifaceted measure. Defining overall job satisfaction as the sum of its many facets (discrete elements of which the job is composed) has been shown to neglect some major determinants of job satisfaction. Scarpello and Campbell (1983) looked at the satisfaction-generating characteristics of the facets of a job and compared these with global measures of job

satisfaction, concluding that facet satisfaction did not completely explain global satisfaction. The use of a single global measure may also mask the relationship of performance and job satisfaction (poor performers tend to be less satisfied) (Jackofsky, 1984). Alternatively, the empirical use of many separate facets of job satisfaction is often hindered by collinearity in the data.

Another useful construct for explaining turnover is organizational commitment, the psychological attachments to the organization which make voluntary separation difficult. Mowday, Steers, and Porter (1979) define organizational commitment as an acceptance of the goals and values of the organization, a willingness to exert considerable effort on behalf of the organization, and a desire to maintain membership in the organization. Organizational commitment has been identified as an important determinant of turnover for several occupational groups (Porter et al., 1974).

The relationship between job satisfaction, organizational commitment, and turnover has prompted much of the most recent research on retention behavior. The unique interplay of personal and job characteristics, institutional structure, and role-related factors found in the military environment provides an ideal setting for the study of this relationship.

2.   Second Job Holding and Reserve Participation

Reserve participation can be viewed as a part-time job that attracts "moonlighters" who also hold full-time (civilian) jobs (Mehay, 1988). These individuals work a specified number of hours on their primary jobs but desire to increase their incomes by working additional hours as well. If additional hours are not available on the primary job, they must acquire a second job.

Reserve participation offers the moonlighter the opportunity to earn more

5

income as well as shopping privileges at military exchanges, the esprit de corps of military service, and the opportunity to serve ones country. Reservists work one weekend per month and because hours of work are so restricted, this activity fits the definition of a secondary job.

The economic theory of second job holding suggests that the hours of work supplied to the labor market by an individual will be a function of labor market income and the individual's evaluation of the time spent on all nonmarket activities (leisure time). Workers will then supply to the labor market the number of hours for which earnings are sufficient to compensate for the foregone leisure time. For the desired number of labor hours, the wage rate equals the individual's marginal value of leisure time.

The Reserve job differs from other moonlighting or part-time jobs in several respects, the most important of which is probably the required commitment to some specified length of service. In addition, the Reservist must pay nonreimbursable travel costs to reach his or her unit, though some portion may be deductible for tax purposes as a business expense. A period of full-time training is also required annually and this presents a potential source of conflict with the civilian job. The limitation on available working hours offered by the Reserves is another unique feature.

Shishko and Rostker (1976) developed a theory of moonlighting to explain the behavior of Air Force Reservists. They identified and evaluated the effects of economic variables on the decision to moonlight and showed that the probability that an individual will decide to moonlight is increased by; lower primary wages, fewer hours worked on the primary job, higher secondary wages, and more hours offered by the secondary job.

This model was subsequently modified by McNaught (1981) to include features of the employment context unique to the Reserves, including the effects of fixed

6

drills and travel costs. McNaught's model specified Reserve participation as a function of: the Reserve wage, the civilian primary wage, the civilian secondary wage, hours worked on the primary job, the unemployment rate, the eligible population, information on Reserve opportunities, travel costs, and regional characteristics.

Grissmer and Kirby (1985) analyzed data on nonprior service enlisted Reservists who entered military service in 1980. They found that Reservists, unlike civilian moonlighters, appear to be motivated more by a preference or taste for the job itself than by monetary incentives. Grissmer et al. (1982) found a similar lack of significance in the relationship between pay and enlisted Army Reserve participation. An explanation for these findings is that net, after-tax income derived from Reserve pay is relatively small and additional costs (transportation, lost civilian earnings, etc.) reduce net earnings even further.

When Fithian (1988) analyzed the effects of a wide range of variables on the retention behavior of male first-term Army Selected Reserve enlistees, he found a strong role for marital status and a very limited role for monetary factors. Similar studies of first-term (O'Donohue, 1988) and second-term (Randall, 1989) male Marine Corps Reservists yielded comparable results.

3.   Gender-Related Turnover Research

Women have increased their participation in the labor force in recent years and, by the year 2000, entrants into the labor force are expected to be 65% female. It is anticipated that over 80% of all adult women will be employed by 1995 (Fullerton and Tschetter, 1982). Studies of employment differences between men and women have identified the implications of these demographic changes.

Many studies have shown women to have higher turnover rates than men. This discrepancy has often been attributed to the lower wages received by women and their

interrupted career patterns (Ehrenberg and Smith, 1988). When Blau and Kahn (1981) controlled for these factors, their results indicated no significant difference in retention behavior between men and women.

The measurement of turnover rates for men and women at different stages in their working/personal lives indicates that there is great diversity in retention behavior among various gender and family configuration groupings. Studies of the effects of children on the career attainment of women reveal greater stress and career limitations among working women with young children than among other employed women (Roos, 1983). Retention rates for women vary over a wider range than those for men, but women whose children have reached school age are the most stable employees, regardless of gender (*Business Week*, 1989).

A comparison of the retention behavior of single women without children with that of males provides another approach to explaining gender differences in turnover. If maternal responsibilities are the major influence on retention, these two groups should behave similarly. The two groups were found to be very similar in their turnover histories by Treinman and Terrell (1975).

Lewis and Cooper (1987) found lower commitment to work and more limited career aspirations among women with young children than among other female workers. They also found that fathers of young children were similarly less committed to work than other male workers. Powell and Pozner (1989) found greater career commitment among men than women and identified differences in job satisfaction and the spill-over of job-related tensions into family and personal life.

Gender differences in work attitudes were investigated by Shukla, Sarna, and Nigam (1989). Men were found to value autonomy, variety, task significance, and

8

promotion opportunity most highly, while women valued pay equity and convenient work schedules. For both males and females, job satisfaction was found to be a function of the difference between expectations and real rewards. Kessler and McRae (1982) investigated gender differences in the relationship between earnings and well-being. They found this relationship to be much stronger for females than for males, which suggested to them that women were more satisfied with their pay than were men and/or that women's expectations from work were not as great.

Studies of gender differences in retention among Active Duty military personnel have been extensive. Binkin and Eitelberg (1986) and Eitelberg (1988) describe the growing role of women in the military and the characteristics of their employment behavior. Warner (1981) and other researchers have pointed out that while women enlistees are of higher quality than their male counterparts (based on mental group and high school diploma status), their first-term reenlistment rates are lower than those for men. Subsequent to the decision to stay beyond the first term, however, the rate of separation is not significantly different for men and women (Hosek and Peterson, 1990).

Segal (1988) describes both the military and the family as "greedy" institutions that make conflicting demands on the individual. The demographic structure of the military has changed to include a large proportion of personnel with families, including a growing number of single women with children (Maze, 1989). Segal identifies divergent patterns of retention behavior for groupings based on gender and family configuration. Waite and Berryman (1985), looking at turnover among women in the military on the basis of occupation (traditional vs. nontraditional), found no significant difference in first term reenlistment.

Bowen (1989) evaluated the effects of satisfaction with family life on military

9

reenlistment and suggested that women are most strongly influenced in turnover behavior by their perception of the quality of the military environment as a place to raise children. Edwards' (1989) investigation of the effects of family status on the retention of second-term Active Duty female enlistees revealed a stronger tendency to reenlist among women with children than among those without children, regardless of marital status.

C.   Objectives

The goal of this report is to identify, explain, and evaluate the factors that determine differences in enlisted turnover behavior between men and women serving in the USAR. A database representing all USAR members, and a multidisciplinary theoretical and methodological framework together provide the opportunity to develop a comprehensive and innovative approach to the study of gender differences in Reserve retention.

Numerous studies of gender differences in Active Duty retention have been undertaken, and many researchers have investigated the turnover behavior of male Reservists. However, little work has been done to identify gender differences in Reserve retention. This study focuses specifically on the factors that differentiate the employment stability of men and women who serve in the USAR. Sufficient sample size for female cohorts in the database used for this study makes such a comparison viable.

Most earlier Reserve turnover studies have been founded on either attitudinal/ motivational factors or on demographic/economic factors. This study incorporates both sets of factors in a broad turnover model. Researchers have often limited the number of cognitive/affective variables by using only global measures or have been overwhelmed by detail and collinearity when using multiple measures. Factor analysis is used here to construct composite variables from an extensive range of cognitive/affective attributes.

The intention to stay or leave has frequently been the only turnover indicator

10

available to researchers. This study uses true longitudinal data. Respondents to the 1986 Reserve Components Survey were matched with three years of subsequent personnel records to obtain actual stay/leave behavior. Hence, this study has been able to investigate the determinants of actual rather than intended retention.

The techniques for multivariate analysis employed in many turnover studies have not been those most appropriate for the characteristics of the decision-making process under investigation. Ordinary least squares regression is often used, but it is not suited to the categorical nature of the turnover decision. Discriminant analysis is an appropriate technique for categorical data, but it is based on some fairly restrictive assumptions about the distributions of explanatory variables and the similarities among covariance matrices for dependent variable categories. The logit model used here provides a more robust method for testing hypotheses about the stay/leave choice. It is based on a threshold theory that describes the Reservist's choice between these two discrete alternatives very well.

11

II. DATA AND METHODOLOGY

A.   Data

1.   The 1986 Reserve Components Survey

The data selected for use in this study were derived from the 1986 Reserve Components Survey. The Office of the Assistant Secretary of Defense (Reserve Affairs) and the Office of the Assistant Secretary of Defense (Force Management and Personnel) sponsored the administration of this survey instrument to a sample of approximately 110,000 officers and enlisted personnel who were members of selected Rese 'e units in all seven Reserve components. This member survey complements related surveys of full-time support personnel and of the spouses of selected Reserve personnel.

The Reserve surveys were designed to provide insights into enlistment and retention decisions, potential effects of mobilization, and the role of the family and civilian employment in Reserve participation. The seven subject areas of the member survey are described in Table 1.

2.   The Reserve Component Common Personnel Data System

Data for Reservists who participated in the 1986 Reserve Components Member Survey were matched with personnel records to provide information on the subsequent retention behavior of these individuals. The Reserve Component Common Personnel Data System (RCCPDS) is a computerized database maintained by the Defense Manpower Data Center. One of its features is a transactions file that reports gains, losses, and reenlistment/extensions. For this study, information from the RCCPDS and the Reserve Enlisted Master File were used to determine the status, as of June 30, 1989, of those who participated in the 1986 Reserve Components Member Survey.

Table 1. Major Subject Areas of the
1986 Reserve Components Member Survey

MILITARY BACKGROUND - Reserve component, paygrade, length of service, prior service.

MILITARY PLANS - Likelihood of remaining in Reserves until retirement, good years toward retirement, plans for next year, reasons for participation.

MILITARY TRAINING,
BENEFITS AND PROGRAMS - Source of training in MOS, comparison of civilian and Reserve job, annual training, Reserve earnings, educational benefits, unit training objectives, opinions on unit characteristics.

INDIVIDUAL AND FAMILY
CHARACTERISTICS - Gender, age, marital status, education, number of dependents, demographic information on spouse and spouse military participation.

CIVILIAN WORK - Labor force participation, civilian earnings, interface between civilian employment and Reserve participation, spouse's employment.

FAMILY RESOURCES - Additional income sources, debts and mortgages, potential effects of mobilization on income.

MILITARY LIFE - Attitudes toward time spent in various activities, interest in information on Reserve programs, satisfaction with aspects of military life and work, overall satisfaction with Reserve participation.

B.   The 1986 Matched Enlisted Army Reserve Sample

This report focuses on differences in the factors influencing retention of men and women Army Reservists. To provide a clear picture of these distinctions, groups that were fairly homogeneous in terms of tenure and prior service status were selected. The partition of the sample on the basis of prior service background was based on recognition of the broader military experience of those who had served at least one year on Active Duty as well as on the traditional separate treatment of the prior service and nonprior service markets.

The enlisted Reserve sample used for analysis was also limited to those in paygrades E4 and E5. It was felt that losses among E1s, E2s, and E3s represented attrition among those with too little familiarity with the Reserves to develop informed opinions on the large number of characteristics of Reserve participation about which survey respondents were queried. E6s and above were deemed likely to be too near retirement eligibility to be considered in the same analysis with those making a much earlier reenlistment decision.

Table 2 shows sample sizes for the gender subgroups within prior and nonprior service categories. Only those respondents who had *one or more years of Active Duty service* are categorized as prior service. The 1986 Reserve Components Member Survey sampled more heavily among women than among men, but the number of respondents in the female cohorts is still substantially smaller than in the male cohorts.

Selected characteristics of these Reservists are presented in Tables 3 and 4. Statistically significant differences between men and women on these characteristics were identified and are indicated in the tables.

Prior service Reservists (those joining the Reserves after serving one or more years on Active Duty) were older at entry than those without prior service. Women entering the

14

Table 2. Army Enlisted Reserve E4, E5 Sample Subgroups

Nonprior Service		Prior Service	
Male	Female	Male	Female
1,288	590	1,848	316

Table 3. Selected Characteristics of the Prior Service Reserve
Enlisted Sample

	Male n=1,848	Female n=316
Mean age at Reserve entry (in years)**	26.3	24.4
Mean current age (in years)**	30.7	27.9
% holding degree beyond H.S. diploma	20.0	18.7
% nonwhite race/ethnic group	43.8	44.8
Family status (%)**		
Single, no children	26.5	35.3
Single, with children	10.6	26.2
Married, no children	10.9	10.1
Married, with children	51.8	28.1
Paygrade (%)**		
E4	47.9	56.8
E5	52.1	43.2
Mean length of Reserve service (in years)**	4.5	3.5
Mean length of active duty service (in years)**	3.8	3.4
%travelling >1 hour to drill	15.5	17.0
% employed (civilian job) full time**	71.8	51.4
% remaining in Selected Reserves, 6/89	68.4	64.4

** Significant difference between males and females at the .05
level. (T-test or Chi-square).

15

Table 4. Selected Characteristics of the Nonprior Service Reserve Enlisted Sample

	Male n=1,288	Female n=590
Mean age at service entry (in years)**	20.7	21.7
Mean current age (in years)**	25.3	26.5
% holding degree beyond H.S. diploma**	16.8	23.6
% nonwhite race/ethnic group**	32.0	58.8
Family status (%)**		
Single, no children	49.4	43.2
Single, with children	8.0	22.8
Married, no children	11.4	11.2
Married, with children	31.2	22.8
Paygrade (%)**		
E4	51.1	37.8
E5	30.6	36.4
Mean length of Reserve service (in years)	4.7	4.8
% travelling >1 hour to drill*	17.0	13.8
% employed (civilian job) full-time**	70.7	61.5
% retained by Reserves, 6/89**	62.9	69.8

*   Significant difference between males and females at the .10 level. (T-test or Chi-square).

**   Significant difference between males and females at the .05 level. (T-test or Chi-square).

Reserves without previous Active Duty experience were older than male nonprior service enlistees, but men with prior active service were older than prior service women on joining the Reserves. These differences in age at entry were significant for both prior and nonprior service groups.

Current age was also significantly different for men and women, both prior and

nonprior service. Nonprior service females were more than a year older than male nonprior service enlistees, while men with prior service were more than two years older, on the average, than women who had served on Active Duty.

Nonprior service women were significantly more likely than nonprior service men to hold a degree above a high school diploma, which is consistent with nonprior service women entering the Reserves being older than their male counterparts. This pattern was reversed for prior service personnel, with men (who entered the Reserves at almost two years older than women entrants) being slightly (though not significantly) more likely to hold a degree above a high school diploma.

The disparity in race/ethnic group distribution between men and women was pronounced for the nonprior service group (and was statistically significant). Nonprior service female enlistees were nearly 59% nonwhite, while male nonprior service Reservists were only 32% nonwhite. The ratios of whites to nonwhites for the prior service gender cohorts were very similar (and the difference between them was not significant). The nonwhite category includes Hispanics, blacks, and other nonwhites.

Family status distinctions between prior and nonprior service members showed larger proportions who were married with children among the prior service groups, as would be expected in view of their more advanced age (both current and at entry). Differences in family status distributions between men and women, both prior and nonprior service, were significant at the .05 level.

Paygrade distributions reflected the greater total military service of many prior service Reservists in that they were weighted more heavily toward the upper ranks. Differences in paygrade distributions between men and women Reservists were statistically significant for both prior service gender groups. Women with prior service, being younger

17

and having served less time on Active Duty than their male counterparts, were more heavily represented among E4s than were prior service men. Nonprior service women, on the other hand, were more likely to be E5s than men without previous active military experience.

The percentage of respondents travelling more than one hour to drill ranged from about 14% (nonprior service females) to 17% (nonprior service males). Prior service males were less likely to travel more than one hour to weekend drill than were prior service females but nonprior service males were more likely than their female counterparts to make such a lengthy journey. Differences in duration of journey to work by gender were significant (.10 level) for nonprior enlistees but not for prior service Reservists.

The average length of Reserve service was greater (but not significantly) for nonprior service men than women while, for prior servicemembers, men had served significantly longer than women. The average length of time served on Active Duty for prior service men was 3.8 years while for women it was 3.4 years.

Men were significantly more likely to be employed full time than were women among both prior and nonprior service personnel. The lowest percentage employed full time was for prior service females (51.4%) and the highest was for prior service males (71.8%).

Female nonprior service respondents were more likely (69.8%) to have remained in the Selected Reserve through the end of our observation period (June 30, 1989) than were their male counterparts(62.9%). For prior service enlistees, men were more likely (68.4%) than women (64.4%) to be stayers. These differences in retention were significant at the .05 level for the nonprior service gender groups but not for prior service enlistees.

:

C.   The Logit Model

1.   Qualitative Choice Theory

The turnover model used for this study is based in qualitative choice theory, relying on the premise that individuals make choices among discrete alternatives (stay/leave) on the basis of their individual characteristics. Different functional turnover relationships can be estimated to assess the relative importance of individual factors, taking into account the effect of other variables in the model. Such equations differ in their assumptions about the probabilistic nature of the turnover decision process. The logit model is based on the cumulative logistic probability function and can be thought of as representing a threshold theory of turnover (Maddala, 1980; McFadden, 1973).

The behavioral assumption underlying our threshold theory approach to turnover is that a Reservist has preferences between two alternatives, staying or leaving, and will select his or her most preferred alternative. If preference can be expressed as a linear transform of exogenous variables, then

$$U_{i1} = \sum_{k} a_{k1}X_{ik} + w_{i1} \text{ and}$$

$$U_{i2} = \sum_{k} a_{k2}X_{ik} + w_{i2}$$

where

U_{ij} is Reservists i's preference for alternative j, j = 1,2;

w_{ij} stands for random aspects of behavior, approximation errors, and unmeasured elements affecting preference;

X_{ik} is the value of the kth explanatory variable affecting Reservist i's decision; and

a_{kj} is the coefficient of the kth explanatory variable affecting decision j.

19

Let d_i be the difference in Reservist i's preference between staying and leaving, d_i becomes the threshold variable for the stay/leave decision:

$$d_i \equiv U_{i1} - U_{i2}$$
$$= \Sigma b_k X_{ik} - v_i$$

where,

$$b_k \equiv (a_{k1} - a_{k2}) \text{ and } v_i \equiv (W_{i2} - W_{i1}).$$

Reservist i will choose to stay when d_i is positive, i.e., when

$$U_{i1} > U_{i2}$$

or $\quad\quad\quad d_i > 0$

or $\quad \Sigma b_k X_{ik} > v_i.$

If Y_i, the observed choice of Reservist i, is equal to one when Reservist i chooses to stay $(d_i > 0)$ and is equal to zero when Reservist i chooses to leave $(d_i < 0)$, then

$$P(Y_i = 1) = P(d_i > 0)$$
$$= P(v_i < \Sigma b_k X_{ik})$$
$$= \int_{-\infty}^{\Sigma b_k X_{ik}} f(v) dv$$

where f(v) is the probability density function of the random variable v. If v is assumed to be a logistic random variable, then the stay/leave decision is formulated as a logit model.

The decision to leave or stay on Active Duty may be characterized as a dichotomous choice, taking the value of one (stayer) if the enlisted Reservist was still in the Selected Reserve on June 30, 1989, and a value of zero (leaver) otherwise. The logistic regression model relates the participation decision of the ith Reservist, Y_i, to a k dimensional vector of individual characteristics for Reservist i, X_i, such that:

$$P(\text{Reservist i does not leave}) = P(Y_i=1 \mid X_i) = \frac{1}{1 + e^{-\beta X_i}}$$

or

$$\ln\left[\frac{\text{Prob } (Y=1 \mid X_i)}{1-\text{Prob } (Y=1 \mid X_i)}\right] = \beta X_i = \sum_j \beta_j X_{ij}$$

where β is the coefficient vector for the Reservist's characteristics. β_j may be interpreted as the impact of a change in characteristic j on the log of the retention odds ratio, holding other individual characteristics constant.

2. Selection of Explanatory Variables

Logit models were developed to explain enlisted retention behavior by combining a set of explanatory variables selected on the basis of general turnover theory and prior military retention studies. As shown in Table 5, demographic characteristics, civilian employment status, journey to drill, tenure, cognitive/affective job factors, and economic incentives are included.

Race/ethnic group, age at entry into the Army Reserve, family status, and level of education were the demographic variables included in the model. Race/ethnicity information was structured as a dichotomous variable, taking on a value of zero for white respondents and a value of one for nonwhites. Family status was included as a set of dichotomous variables, with "single, no children" as the base case and dummy variables representing "married, with children," "married no children," and "single, with children." Level of education was also treated as a dichotomous variable, with a value of one for respondents with more than a high school education and zero otherwise. Age at Reserve entry, a continuous variable, varied from 17 to 44 years.

Participation in the civilian labor market was incorporated into the model as

21

Table 5. Reserve Enlisted Retention Model
Explanatory Variables

Demographic
- age entered Reserves (years)
- education beyond high school (yes/no)
- race/ethnic group (white/nonwhite)
- family status: single, no children
- single, with children
- married, no children
- married, with children

Military background
- paygrade (E4/E5)
- travel time to drill (less than 1 hour/1 hour or more)

Civilian employment
- full time civilian job (yes/no)

Composite factors
  Income
  - extra money to use now
  - money for family expenses
  - income for future needs

  Intrinsic job characteristics
  - pride in accomplishments
  - challenge
  - enjoyment
  - people
  - equipment
  - advancement opportunities
  - serve country
  - travel
  - training re civilian job
  - educational benefits

  Drill
  - supervision/direction during drill
  - training during drill
  - leadership opportunities during drill
  - opportunity to use MOS skills during drill
  - unit morale
  - promotion opportunities in unit

  Retirement (very important/not very important)

a variable taking on a value of zero if the Reservist was employed full time in the civilian sector and one otherwise. The length of time required for the respondent's journey to drill was also treated as a two-valued measure, with those travelling for more than one hour assigned a value of one and those with a shorter trip a value of zero.

The military experience of the surveyed Reservists was represented by their paygrade. The sample included ranks of E4 and E5. The base case was taken to be E4. Rank is closely associated with length of service and provides a proxy for tenure in these models. The construction of separate prior service and nonprior service models recognizes the influence of previous Active Duty experience on retention.

The 1986 Reserve Components Member Survey included numerous questions designed to identify the factors that motivate Reservists to remain in the service and determine their degree of satisfaction with various characteristics of the military job. To minimize collinearity and for purposes of parsimony, three distinct dimensions were discerned among responses to 19 questionnaire items using factor analysis. Table 5 indicates that these dimensions were interpreted as representing: current income; intrinsic job characteristics; satisfaction with drill activities and structure; and retirement benefits. Retirement benefits was treated as a separate dimension, both because of its failure to load distinctly on a single factor and our desire to evaluate its unique role in motivating Reserve affiliation.

III. MODEL RESULTS

A. Reference Individual Methodology

Tables 6 and 7 present the results of the logit models for enlisted retention. In addition to indicating the level of significance of each explanatory variable, these tables reveal the partial effect of varying each characteristic while holding the remaining traits constant. In order to accomplish this, the probability of retention for a reference or base case individual was calculated initially. This reference individual was characterized by mean values for all continuous variables and a value of zero for dichotomous explanatory variables. The change in retention probability for a Reservist who differed from the base case on a single trait was then computed and compared with the reference individual's probability to ascertain the partial effect.

For all four of the models, the base case or reference individual was a white, unmarried, E4 Reservist with no children whose highest educational degree was a high school diploma, who was employed full-time in the civilian sector, and travelled less than one hour to drill. This individual had entered the Reserves at the average entry age for his or her gender/prior service cohort. He or she did not indicate that retirement benefits were a major motivating influence, and his or her responses to the component items for the income, intrinsic job characteristics, and drill factors produced mean scores for these composite factors.

B. Significant Variables and Partial Effects

1. Prior Service Models

Table 6 shows the partial effects and significance levels for explanatory variables included in both the male and female prior service logit models. For male

24

Table 6. Partial Effects of Individual Variables on Prior Service Enlisted Reserve Retention By Gender

```
Predicted retention probability for male base case:    .553
Predicted retention probability for female base case:  .596
```

| | Partial Effect | |
| Base Case | Male | Female |
	n=1,848	n=316
Age entered Reserves (mean)	.009**	.004
Education beyond H.S. (no)	.039	.021
Race/ethnic: white	.008	.072
Family status: single, no children (base)		
single, with children	.002	.103
married, no children	.074**	.049
married, with children	.027	-.048
Paygrade: E4 (base)		
E5	.127**	.077
Travel to drill: less than 1 hour	-.063*	-.085
Full time civilian employment	-.016	-.040
Composite factors (mean scores)		
Income	.014	.003
Intrinsic job characteristics	.021	.074**
Drill	.010	.068**
Retirement (not major influence)	.077**	.045
Model Chi-square with 13 d.f.	89.48**	25.79**

```
 * Significant at the .10 level.
** Significant at the .05 level.
```

enlistees, age at Reserve entry, family status of "married, no children," paygrade, and retirement benefits were all significant at the .05 level while travel time was significant at the .10 level. For women prior service Reservists, only the composite factors for drill characteristics and intrinsic job characteristics were significant at the .05 level.

The importance of cognitive/perceptual influences and the more limited role of economic incentives and family status for women with prior Active Duty service, as compared with their nonprior service counterparts (see Table 7), is particularly striking. The taste for military service acquired on Active Duty and the relatively stronger labor market position of those women with military experience may account for this distinction.

The male prior service model results also showed a pattern of influences that differed from the nonprior service model, with family configuration playing a larger role and income needs a smaller role. While the effect is not as strong as that seen for women Reservists, a comparison of the prior service and nonprior service male models reveals a less overwhelming concern with economic benefits among prior service as opposed to nonprior service enlistees. This may indicate that those with prior service have better civilian labor market prospects, given their full-time military job experience, and thus may be more confident in their financial security than their nonprior service counterparts.

Male prior service Reservists who were one year older at Reserve entry than the mean for their gender/prior service cohort were 0.9% more likely to remain in the service while female Reservists who were a year older than the mean at entry had a retention probability 0.4% above that of the base case. Age at entry was significant for men but not for women. Education beyond a high school degree had a positive influence on male (3.9%) and female (2.1%) retention. Nonwhite Reservists, male and female, were more likely than the white base case individual to remain in the Reserves, 0.8% increase for men

26

and a 7.2% increase for women. This result is in keeping with previous studies and may indicate that the alternative civilian employment opportunities available to nonwhites are more limited.

Family status affected the retention of men and women Reservists differently. The reference individual's family configuration was single without children. Male enlistees who were single with children or married (with or without children) were more likely than the base case to remain with the Reserves. Those married men who had no children were significantly less prone to turnover (a 7.4% increase in retention probability). Single and married men with children were 0.2% and 2.7% more likely to remain than the base case male Reservists. Women who were married with children were less likely (-4.8%) than the base case to stay in the Selected Reserve. Single women with children and married women without children both showed a greater inclination to remain (10.3% and 4.9%, respectively) than the base case female Reservist.

The higher probabilities of retention exhibited by men with a spouse and/or children as compared with single, childless men may reflect a greater need for financial security. The greater tendency of married women with children to leave the Reserves may reflect the conflict these women encounter between their traditional child care responsibilities and Reserve obligations. Single women with children, on the other hand, may stay at a greater rate because of their greater need for the financial benefits of Reserve service.

The paygrade increment from E4 to E5 was associated with a significant increase in retention probability for male prior service members (12.7%). These individuals have made a substantial start on the required years of service toward retirement by the time they have reached the E5 rank. Female prior service Reservists also showed increased

27

likelihood of retention with paygrade increments (7.7%), but this factor was not significant.

Travel to the drill site of more than one hour resulted in a significant decline in retention for PS men (-6.3%) and a similar but not significant decline for PS women (8.5%). Extended commute time represents a disamenity that was expected to discourage Reserve participation.

A lack of full-time civilian employment had a negative (though not significant) effect on the staying behavior of both gender groups (-1.6% for males and -4.0% for females). This decline in retention for those who do not have full time jobs may be an indicator of the effects of general employment stability among those Reservists employed full-time. Another explanation may be the subsequent migration of those without full-time employment when they find jobs too far distant from their Reserve unit to continue participation. Prior service women were less likely to be employed full-time than any of the other three gender/prior service cohorts studied here with only 51% in this category, while prior service males have the highest proportion, with 72% employed full-time.

The composite factors representing attitudes toward various facets of the Reserve job also increased the retention probability for both men and women when each was incremented by one standard deviation. Among prior service women Reservists, intrinsic job characteristics and unit drill characteristics were both very significant influences on retention (.05 level). For men, none of the composite factors was significant. An increase of one standard deviation in the factor score for intrinsic characteristics resulted in a 7.4% increase in staying probability for women and a 2.1% increase for men. Analogous increments for the income composite resulted in a 1.4% increase for men and a 0.3% increase for women. The drill composite augmentation raised the retention likelihood for men by 1.0% and for women by 6.8%.

28

While the effect of retirement benefits as a retention motivator was highly significant (.05 level) for prior service males, it did not have a statistically significant influence on prior service females. Men who considered retirement benefits to be of major importance were 7.7% more likely to remain in the Reserves. Women with this same characteristic were 4.5% more likely to be stayers.

2. Nonprior Service Models

Table 7 shows partial effects as well as significance levels for explanatory variables for both male and female nonprior service Reservist models. Only one variable, retirement, was significant for both the male and female cohorts. For the male nonprior service model, four variables were significant at the .05 level. These included: age at Reserve entry, paygrade, the income composite factor, and retirement benefits. For females, intrinsic job characteristics and family status of married without children were significant in addition to retirement.

The strong influence of retirement benefits for nonprior service women enlisted personnel included in the sample may be an indication of the strong attraction of this benefit, which is often denied to women who traditionally join the labor force intermittently or on a part time basis. The demographic and cognitive/perceptual factors that have been shown to influence turnover among women in past studies were significant for these women. The model for male nonprior service enlistees showed an even stronger role for economic incentives. The composite factor representing income needs as well as retirement benefits were both significant at the .05 level. Age at Reserve entry and paygrade were also significant at this same level. The paygrade may in some respects be considered a proxy for economic well-being, since earnings tend to increase with rank. The influence of each explanatory variable is discussed in the following paragraphs.

29

Table 7. Partial Effects of Individual Variables on Nonprior Service Enlisted Reserve Retention By Gender

Predicted retention probability for male base case: .567
Predicted retention probability for female base case: .638

| | Partial Effect | |
Base Case	Male n=1,288	Female n=590
Age entered Reserves (mean)	.008**	.003
Education beyond H.S. (no)	.010	.027
Race/ethnic: white	(-.011)[a]	.189
Family status: single, no children (base)		
single, with children	.068	.010
married, no children	-.024	-.148**
married, with children	.043	.014
Paygrade: E4 (base)		
E5	.109**	.051
Travel to drill: less than 1 hour	(+.006)[a]	-.004
Full time civilian employment	(+.018)[a]	-.028
Composite factors (mean scores)		
Income	.043**	.032
Intrinsic job characteristics	.024	.045**
Drill	.004	.009
Retirement (not major influence)	.108**	.054**
Model Chi-square with 13 d.f.	61.74**	27.10**

** Significant at the .05 level
[a] These variables show sign reversals from their bivariate relationships with the dependent variable due to collinearity in the data (see text p. 31)

The regression coefficients for three of the explanatory variables in the male nonprior service model, although not statistically significant, showed sign reversals from their bivariate relationships with the dependent variable (stay=1; leave=0), reflecting collinearity in the data. Nonwhite race/ethnic group was positively associated (Pearson correlation) with staying in the Reserves, while travel time greater than one hour and not employed full time were negatively correlated with staying. The Pearson correlations for staying with travel time and employment were extremely low, less than 0.001, while that between staying and nonwhite was not quite so low at 0.04. There were, however, much stronger bivariate relationships between pairs of these three explanatory variables and the direction of these associations was such that their logit regression coefficients for the multivariate model were "incorrectly" signed because of collinearity among these regressors. The unreliability of these coefficients led us to omit them from the discussion of model results that follow.

A male nonprior service Reservist who was one year older than the mean for his cohort at entry was 0.8% more likely to remain in the Reserves, while a woman who exceeded the average age for women enlistees was only 0.3% more likely to remain. Age at entry was significant for men but not for women. Education beyond the high school level was more influential for women (a 2.7% increase in retention) than for men (a 1.0% increase). Membership in a nonwhite race/ethnic group had a positive influence on female retention (18.9%). (The logit regression coefficient for race/ethnic group in the male nonprior service model was not reliable.) Those who were married with children were more likely than single, childless men or women (the base case) to remain in the Reserves. Married enlistees with no children, however, were less likely than single, childless Reservists to be stayers (for both men and women). Single women with children were more likely

31

(1.0%) to be stayers than the single, childless reference individual. Single men with children were 6.8% more likely than the base case to be retained. Education and race/ethnic group were not significant for either gender group, and only those women who were married without children stayed at a rate significantly different from the reference individual.

As anticipated, advanced paygrade was associated with a stronger tendency to remain in the Selected Reserves. Male E5s were 10.9% more likely to be stayers than an E4 with the same traits. (The rank of E5 was significant at the .05 level for men.) For women, the effect of advanced paygrade was not as pronounced (and was not significant). Female E5s were 5.1% more likely to be retained than was a female E4. Rank is closely associated with length of service in an organization such as the Army and tenure has been shown to be a major influence on turnover in both civilian and military studies.

Factors that reflect the interface between civilian employment and Reserve participation provide some insight into the second job-holding behavior of the sample reservists. Full-time employment was more prevalent among males (71%) than among women (62%). The effect on retention of being without full-time civilian employment was slightly negative for women (-2.8%). Those who are not employed full-time may exhibit less stability in their labor market behavior, including a less lengthy Reserve affiliation, or they may leave the geographic area where their Reserve unit is located to seek work. Women may be substituting part-time civilian employment for Reserve participation. Civilian employment status was not statistically significant for women. (The coefficient for the male nonprior service model was judged unreliable).

A lengthy journey to work to work is often considered an important disamenity associated with "moonlighting." Those women who travelled more than one hour

32

to weekend drills were less likely (-0.04%) to be stayers than were those with a shorter commute time, but the effect was not significant. (The effect of this variable on the male nonprior service model could not be determined reliably.)

The composite factors representing the cognitive/affective influences on retention all had a positive effect on the probability of staying. The influence of the income incentive composite was significant at the .05 level for male Reservists, and an increment of one standard deviation in the factor score resulted in a 4.3% increase in the probability of retention for men. The effect of the income composite was not significant for females, and an increase of one standard deviation in the factor score resulted in a 3.2% increment in female retention likelihood.

The composite representing intrinsic job characteristics was significant for women but not for men. For men, an increase of one standard deviation in the factor score raised the retention probability by 2.4%. For women, the analogous effect was an increase of 4.5%. Unit drill characteristics was not significant in explaining retention for either gender group. An increase in the factor score of one standard deviation for this composite resulted in 0.4% and 0.9% increases in the likelihood of staying for men and women, respectively.

The effects of retirement benefits as a retention motivation were very significant for both male and female enlistees. This is not surprising since Army Reserve retirement benefits are widely viewed as very attractive. Men who considered retirement benefits of major importance were 10.8% more likely to remain in the Reserves, while women who held this viewpoint showed a 5.4% increase in retention probability.

IV. CONCLUSIONS

A. Summary

Data from the 1986 Reserve Components Survey were matched with 1989 military personnel records to gain information on actual retention behavior of enlisted Reservists. A sample of 4,042 enlisted personnel in paygrades E4 and E5 was selected and used in developing turnover models based on threshold behavior theory. Logit regression techniques were used to estimate separate turnover models by gender and prior service status groups. Explanatory variables included demographic, military background, economic incentive, and cognitive/perceptual factors. Factor analysis was used to identify dimensions among attitudinal responses and to construct a set of composite variables.

Model results indicate that important influences on retention varied between men and women within prior service and nonprior service groups. All four groups were significantly influenced by retirement benefits. Nonprior service women were also influenced by intrinsic job characteristics (noneconomic benefits) and family status. Nonprior service men were significantly affected by age at Reserve entry, paygrade, and income, in addition to retirement benefits. Prior service females were influenced only by additional cognitive/affective factors representing attitudes toward intrinsic job characteristics and drill activities. Prior service men were significantly affected in their turnover behavior by age at Reserve entry, paygrade, travel time to drill, and family status.

B. Recommendations

The gender differences in the effects of demographic, military background, and cognitive/affective factors that were revealed in this study of enlisted Reserve personnel provide insights for recruitment and retention policy.

34

Those who valued retirement benefits, regardless of gender and prior Active Duty service, were strongly inclined to remain in the Reserves. Policies that build confidence in the continued value of these benefits should have a positive influence on retention while threats of diminished or restricted retirement benefits are likely to deter continued Reserve participation among all gender and prior service cohorts.

Policies directed toward increasing current Reserve income are likely to have a strong positive impact on the likelihood of nonprior service male enlistees' remaining in the Reserves. The effects of income-related policies on men who have previously served on Active Duty and on women, either prior or nonprior service, are likely to be much more limited.

The noneconomic benefits of Reserve participation have a large role in the retention behavior of women reservists, both prior and nonprior service. Policies that augment the intrinsic benefits of the Reserve job are likely to promote sustained female participation in the Selected Reserves. Opportunities for travel, promotion, training/education and advancement could be expanded to encourage female retention and some of the less tangible characteristics of participation, such as the chance to serve one's country, to take pride in challenging work, and to enjoy social contacts, could be emphasized in reenlistment counselling as well as in recruiting for both the prior service and nonprior service female markets.

The specific characteristics of weekend drill activities played an important role in the retention of prior service women. Policies to monitor and improve the quality of the drill experience would aid in keeping these women in the Reserves. For example, the opportunities to use MOS skills while drilling could be enhanced and leadership roles for women could be expanded.

For men in the Army Selected Reserve, prior or nonprior service, the older the

individual was on entering the Reserves the more likely he was to remain throughout the period of interest. This significant role for entry age implies that seeking to recruit mature enlistees will benefit retention goals. Nonprior service recruiting efforts tend to be directed toward recent high school graduates rather than toward those with more work experience and/or education. Recruiting resources could be used more extensively to target the older male nonprior service market. Among prior service enlistees, projected declines in the Active Duty force may lead to the availability of some more mature soldiers with great potential for long-term Reserve service.

Family status had important effects on the retention behavior of nonprior service women and on prior service men. Policies directed toward limiting conflicts between family and Reserve participation should lead to improved retention. The needs of prior service and nonprior service cohorts are likely to differ, in that prior service group members are older and more likely to be married and to have children.

The negative effect of extended travel time to drill implies that policies to locate Reserve Centers within proximity of appropriate population centers may benefit retention, especially among prior service males. Unfortunately, due to the design of the survey instrument, regional differences in travel time to drill are not directly captured in this service-wide study. These differences are quite pronounced (Johnson and Thomas, 1990) and separate regional models might well assign a larger role to commute time for all gender and prior service groups.

There are several areas where further study of gender differences in Reserve participation would be beneficial. An investigation of gender differentials in Reserve participation based on family configuration subgroups and on occupational groupings would extend the results reported here in some interesting and potentially useful directions. A

36

comparison of gender differences in second job-holding behavior among civilian workers and Reservists would give some insight into the effects of the features peculiar to Reserve participation, such as a fixed time commitment and limitations on the number of hours worked. An especially useful direction for additional study would be the appending of Reserve unit characteristics and local area labor market conditions to the survey data set. Finally, the next major Reserve Component Survey will provide opportunities for evaluating changing patterns of Reserve participation among men and women over a period of time characterized by unprecedented revisions in the allocation of defense resources.

REFERENCES

Arnold, H., and D. Feldman. "A Multivariate Analysis of the Determinants of Job Turnover," Journal of Applied Psychology, 1982, Vol. 67, pp. 350-360.

Binkin, M., and M. Eitelberg. "Women and Minorities in the All-Volunteer Force," in The All-Volunteer Force After a Decade: Retrospect and Prospect. Elmsford, NY:Pergamon, 1986.

Blau, F., and L. Kahn. "Race and Sex Differences in Quits by Younger Workers," Industrial and Labor Relations Review, 1981, Vol. 34, pp. 563-577.

Bluedorn, A. "A Unified Model of Turnover from Organizations," Human Relations, 1982, Vol. 35, pp. 135-153.

Bowen, G. "Satisfaction with Family Life in the Military," Armed Forces and Society, Vol. 15, No. 4, pp. 571-592.

Business Week, March 20, 1989, pp. 126-134.

Cotton J., and J. Tuttle. "Employee Turnover: A Meta-analysis and Review with Implications for Research," Academy of Management Review," 1986, Vol. 11, No. 1, pp. 55-70.

Dalessio, A., W. Silverman, and J. Schuck. "Paths to Turnover: A Reanalysis and Review of Existing Data in the Mobley, Hollingsworth and Horner Turnover Model," Human Relations, 1986, Vol. 39, pp. 245-263.

Defense Manpower Data Center. 1986 Reserve Components Survey User's Manual and Codebook. Arlington, VA: Defense Manpower Data Center, 1986.

Edwards, L. Effects of Marital/Dependency Status on Reenlistment Behavior of Second-Term Enlisted Females. Unpublished M.S. thesis. Monterey CA: Naval Post-graduate School, 1989.

Ehrenberg, R., and R. Smith. Modern Labor Economics. Glenview, IL: Scott, Foresman, and Co., 1988.

Eitelberg, M. Manpower for Military Occupations. Washington, DC:Office of the Assistant Secretary of Defense, Force Management and Personnel, 1988.

Fithian, D. An Analysis of Retention of First Term Enlisted Personnel in the Selected Reserve. Unpublished M.S. thesis. Monterey, CA: Naval Postgraduate School, 1988.

Fullerton H., and J. Tschetter. "The 1985 Labor Force: A Second Look," Monthly Labor Review, July 1982, pp. 15-21.

Grissmer, D., B. Burright, Z. Doring, and J. Sachar. The 1978 Selected Reserve Reenlistment Bonus Test. Santa Monica, CA: Rand Corporation, 1982.

Grissmer, D., and S. Kirby. Attrition and Retention in the Army Reserve and Army National Guard: An Empirical Analysis. Santa Monica, CA: Rand Corporation, 1985.

Hammermesh, D., and A. Rees. The Economics of Work and Pay. New York:Harper and Row, 1984.

Hertzberg, F., B. Mausner, and B. Snyderman. The Motivation of Work. New York: John Wiley and Sons, 1959.

Hosek, J, and C. Peterson. Serving Her Country: An Analysis of Women's Enlistment. Santa Monica, CA: Rand Corporation, 1990.

Jackofsky, E. "Turnover and Job Performance: An Integrated Process Model," Academy of Management Review, 1984, Vol. 9, pp. 74-83.

Johnson, L., and G. Thomas. "Modeling Part-Time Commute Behavior," Proceedings of 1990 Western Regional Science Association, Molokai, HI: February 1990.

Kessler, R., and J. McRae. "The Effects of Wives' Employment on the Mental Health of Married Men and Women," American Sociological Review, 1982, Vol. 47, pp. 216-227.

Lewis, S., and C. Cooper. "Stress in Two-Earner Couples and Stage in the Life Cycle," Journal of Applied Psychology, 1987, Vol. 60., pp. 289-303.

Maddala, G. Limited Dependent and Qualitative Variables in Econometrics. New York: Cambridge University Press, 1980.

Maze, R. "Panel Orders Single Parent Study," Navy Times, July 17, 1989, p. 2.

McCormick, E., and D. Ilgen. Industrial Psychology, 7th ed. Englewood Cliffs, NJ: Prentice Hall, 1980.

McFadden, D. "Conditional Logit Analysis of Qualitative Choice Behavior," in P. Zarembka (ed.), Frontiers in Econometrics, San Diego, CA: Academic Press, 1973.

McNaught, W. The Supply of Enlistees to the Selected Reserve. Santa Monica, CA: Rand Corporation, 1981.

Mehay, S. Moonlighting and Reserve Participation: Are They the Same? Monterey, CA: Naval Postgraduate School, 1988.

Michaels, C., and P. Spector. "Causes of Employee Turnover: A Test of the Mobley, Griffith, Hand and Meglino Model," Journal of Applied Psychology, 1982, Vol. 67, pp. 53-59.

Miller, H., A. Katerburg, and C. Hullin. "Evaluation of the Mobley, Horner, and Hollingsworth Model of Employee Turnover," Journal of Applied Psychology, 1979, Vol. 64, pp. 509-517.

Mobley, W. "Intermediate Linkages in the Relationship Between Job Satisfaction and Employee Turnover," Journal of Applied Psychology, 1977, Vol. 62, pp. 237-240.

Mobley, W., S. Horner, and A. Hollingsworth. "An Evaluation of Precursors of Hospital Employee Turnover Process," Journal of Applied Psychology, 1978, Vol. 63, No. 4, pp. 408-414.

Mobley, W., R. Griffith, H. Hand, and B. Meglino. "Review and Conceptual Analysis of the Employee Turnover Process," Psychological Bulletin, 1979, Vol. 86 (May), pp. 493-523.

Mowday, R., L. Porter, and R. Steers. Employee Organizational Linkages, San Diego, CA: Academic Press, 1982.

Mowday R., R. Steers, and L. Porter. "Measurement of Organizational Commitment," Journal of Vocational Behavior, 1979, Vol. 14, pp. 43-77.

O'Donohue, D. First Term Retention of Enlisted Selected Marine Corps Reservists (SMCR). Unpublished M.S. thesis. Monterey, CA: Naval Postgraduate School, 1988.

Porter, L., and E. Lawler. Managerial Attitudes and Performance. Homewood, IL: Richard D. Irwin, 1968.

Porter, L., R. Steers, R. Mowday, and P. Boulian. "Organizational Commitment, Job Satisfaction, and Turnover Among Psychiatric Technicians," Journal of Applied Psychology, 1974, Vol. 59, pp. 603-609.

Powell, G., and B. Pozner. "Commitment to Career Versus Family/Home Life: Effects of Sex, Sex Role Identity, and Family Status," Psychological Reports, 1989, Vol. 64, pp. 695-698.

Randall, J. Factors Influencing the Retention of Noncommissioned and Staff Noncommissioned Officers in the Selected Marine Corps Reserve. Unpublished M.S. thesis. Monterey CA: Naval Postgraduate School, 1989.

Roos, P. "Marriage and Women's Occupational Attainment in Cross-Cultural Perspective," American Sociological Review, 1983, Vol. 48 (Dec.), pp. 852-864.

Scarpello, V., and J. Campbell. "Job Satisfaction: Are All the Parts There?" Personnel Psychology, 1983, Vol. 36, pp. 577-600.

Segal, M. "The Military and the Family as Greedy Institutions," Armed Forces and Society, 1988, Vol. 13, No. 1, pp. 9-38.

Shishko, R., and R. Rostker. "The Economics of Multiple Job Holding," <u>American Economic Review</u>, 1976, Vol. 66, No. 3.

Shukla, A., T. Sarna, and R. Nigam. "Work Attitudes of Employed Men and Women Who Are Married," <u>Psychological Reports</u>, 1989, Vol. 64, pp. 711-714.

Steers, R., and R. Mowday. "Employee Turnover and Post-decision Accommodation Processes," <u>Research in Organizational Behavior</u>, 1981, Vol. 3, pp. 235-281.

Treinman, D., and K. Terrell. "Sex and the Process of Status Attainment: A Comparison of Working Women and Men," <u>American Sociological Review</u>, 1975, Vol. 40, pp. 174-200.

Waite, L., and S. Berryman. <u>Women in Nontraditional Occupations: Choice and Turnover</u>. Santa Monica, CA: Rand Corporation, 1985.

Warner, J. <u>Issues in Navy Manpower Research and Policy: An Economist's Perspective</u>. Alexandria, VA: Center for Naval Analysis, 1981.

DISTRIBUTION LIST

Agency	No. of Copies
Defense Technical Information Center Cameron Station Alexandria, VA 22314	2
Dudley Knox Library, Code 52 Naval Postgraduate School Monterey, CA 93943-5000	2
Office of Research Administration Code 81 Naval Postgraduate School Monterey, CA 93943-5000	1
Department of Administrative Sciences Library Code AS/Mp Naval Postgraduate School Monterey, CA 93943-5000	1
Library, Center for Naval Analyses 4401 Ford Avenue Alexandria, VA 22302-0268	1
HQ USAREC PAE-RS Bldg. 48-C Fort Sheridan, IL 60037-6090 Attn. MAJ W. Aldridge	1
HQ USAREC PAE-RS Bldg. 48-C Fort Sheridan, IL 60037-6090 ATTN. LTC Charles Williams	1
HQ USAREC PAE-MM Bldg. 48-C Fort Sheridan, IL 60037-6090	2
CDR Guy J. Carrier Commander, Navy Recruiting Command Code 22 4015 Wilson Blvd. Arlington, VA 22203-1991	1

Dr. Timothy W. Elig   1
ARI, PERI-RG
5001 Eisenhower Avenue
Alexandria, VA 22333-5600

CDR W. Woodworth   1
Chief of Naval Operations
OP-136G
Arlington Annex
Washington, DC 20350-2000

Steven Cylke   1
Chief of Naval Operations
OP-1345
Arlington Annex
Washington, DC 20350-2000

CDR William R. Isenbarger, USNR   1
Commander, Naval Reserve Recruiting Command
4400 Dauphine Street
New Orleans, LA 70146-5000

Jerry D. Lehnus   1
DMDC, Suite 400
1600 Wilson Blvd.
Arlington, VA 22209

Bette S. Mahoney   1
Chief, Survey Division
Defense Manpower Data Center
1600 Wilson Blvd., Suite 400
Arlington, VA 22209-2593

H. Wallace Sinaiko, Program Director   1
Manpower Research and Advisory Service
Smithsonian Institution
801 N. Pitt Street
Alexandria, VA 22304

James F. Wortman   1
Air Force Human Resources Laboratory
Brooks AFB, TX 78235

Dr. Jules J. Borack, Code 12   1
Navy Personnel R&D Center
San Diego, CA 92152-6800

Dr. W. S. Sellman   1
Director, Accession Policy
OASD (FM & P) DASD (MM & PP)/AP
The Pentagon, Rm. 2B271
Washington, DC 20301-4000

Robert J. Brandewie, Deputy Director   1
Defense Manpower Data Center
99 Pacific Street, Suite 15A
Monterey, CA 93940

George W. Thomas, Code AS/Te   10
Associate Professor of Economics
Naval Postgraduate School
Monterey, CA 93943-5000

Kathryn Kocher, Code AS/Kk   20
Administrative Sciences Department
Naval Postgraduate School
Monterey, CA 93943-5000